

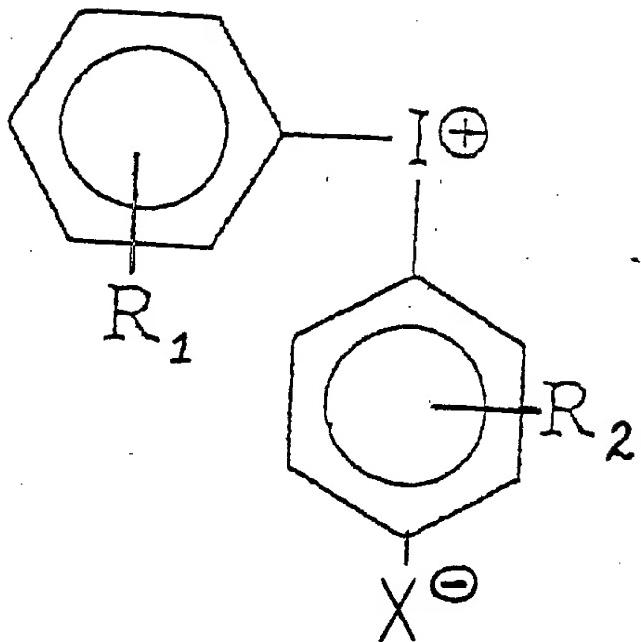
CLAIMS:

1. A zwitterionic compound, comprising:

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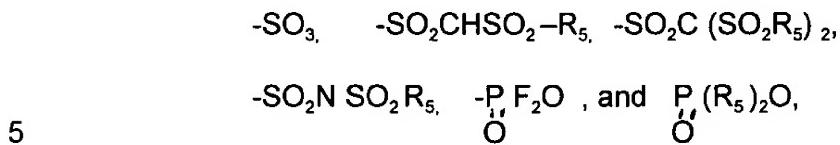
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20 wherein  $\text{X}^-$  is selected from the group of compounds consisting  
of: sulfur-containing groups, nitrogen-containing groups, and fluorine-  
containing groups; and

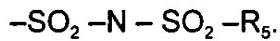
- wherein R<sub>1</sub> and R<sub>2</sub> are each independently selected from the group consisting of substituted or unsubstituted: alkyls, aryls, halides, and fluorinated alkyls, nitrogen containing groups, halogenated alkyls, alkoxy, aryloxy, halogenated alkoxy, unsaturated alkyls, thioalkyls,
- 5 unsaturated fluorinated alkyls, unsaturated alkoxy keto alkyls, alkoxy, aryloxy, keto aryls, sulfonyl alkyl, sulfonyl aryls.

2. The compound of claim 1 in which X<sup>-</sup> comprises one of the following entities selected from the group consisting of:



- wherein R<sub>5</sub> is selected from the group consisting of substituted or unsubstituted alkyls, aryls, cycloalkyls, fluorinated alkyls, and
- 10 fluorinated cycloalkyls.

3. The compound of claim 2 in which X<sup>-</sup> comprises:



4. The compound of claim 2 in which X<sup>-</sup> comprises:



5. The compound of claim 3 in which R<sub>5</sub> is a fluorinated alkyl.

6. The compound of claim 5 in which R<sub>5</sub> is a substituted or unsubstituted aryl.

7. A diaryl zwitterionic iodonium salt having an iodine atom that is positively charged and an anionic group which comprises either a first substituted arene group designated A<sub>1</sub> or a second

substituted arene group designated A<sub>2</sub>, in which A<sub>1</sub> and A<sub>2</sub> are each

- 5 independently selected from the group consisting of:

benzene, fluorobenzene, nitrobenzene, benzoic acid, toluene,

anisole, iodobenzene, 2-nitroiodobenzene, 3-nitroiodobenzene,

4-nitroiodobenzene, 2-iodobenzoic acid, 3-iodobenzoic acid, 4-

iodobenzoic acid, fluoroiodobenzene 4-idoanisole, 3-

- 10 acetamidoiodobenzene, and 4-acetamidoiodobenzene;

further wherein either A<sub>1</sub> or A<sub>2</sub> contain an SO<sub>2</sub>-N-SO<sub>2</sub>R<sub>5</sub> group

substituted upon the arene ring;

wherein R<sub>5</sub> is selected from the group consisting of substituted

or unsubstituted alkyls, aryls, cycloalkyls, fluorinated alkyls, and

- 15 fluorinated cycloalkyls.

8. The salt compound of claim 7 in which the first arene group

A<sub>1</sub> is benzene, and the second arene group A<sub>2</sub> is benzene.

9. The salt compound of claim 7 in which the first arene group

A<sub>1</sub> is nitrobenzene, and the second arene group A<sub>2</sub> is nitrobenzene.

10. The salt compound of claim 7 in which the first arene

group A<sub>1</sub> is benzoic acid, and the second arene group A<sub>2</sub> is benzoic

acid.

11. The salt compound of claim 7 in which the first arene

group A<sub>1</sub> is toluene, and the second arene group A<sub>2</sub> is toluene.

12. The salt compound of claim 7 in which the first arene

group A<sub>1</sub> is anisole, and the second arene group A<sub>2</sub> is anisole.

13. The salt compound of claim 7 in which the first arene group A<sub>1</sub> is Iodobenzene, and the second arene group A<sub>2</sub> is benzene.
14. The salt compound of claim 7 in which the first arene group A<sub>1</sub> is 2-Nitroiodobenzene, and the second arene group A<sub>2</sub> is benzene.
15. The salt compound of claim 7 in which the first arene group A<sub>1</sub> is 3-Nitroiodobenzene, and the second arene group A<sub>2</sub> is benzene.
16. The salt compound of claim 7 in which the first arene group A<sub>1</sub> is 3-Nitroiodobenzene, and the second arene group A<sub>2</sub> is benzene.
17. The salt compound of claim 7 in which the first arene group A<sub>1</sub> is 4-Nitroiodobenzene, and the second arene group A<sub>2</sub> is benzene.
18. The salt compound of claim 7 in which the first arene group A<sub>1</sub> is 2-Iodobenzoic acid, and the second arene group A<sub>2</sub> is benzene.
19. The salt compound of claim 7 in which the first arene group A<sub>1</sub> is 3-Iodobenzoic acid, and the second arene group A<sub>2</sub> is benzene.
20. The salt compound of claim 7 in which the first arene group A<sub>1</sub> is 4-Iodobenzoic acid, and the second arene group A<sub>2</sub> is benzene.

21. A wafer having lithographically etched features on the surface of the wafer, the etched features being adapted for forming an electrical circuit, the etched features having a line width of less than about  $0.5\mu$ , whereby the etch is formed in a photoresist process that employs a diaryl zwitterionic iodonium salt.